CERTIFICATE OF TRANSMISSION BY FACSIMILE (37 CFR 1.8) Applicant(s): **Dexian DOU et al**			Docket No.
Serial No. **09/927,006**	Filing Date **August 9, 2003**	Examiner **Billy Chism**	Group Art Unit **1654**

Invention:

ANTI-ANGIOGENIC PEPTIDES FOR CANCER TREATMENT

I hereby certify that this **Respond to Second Election/Restriction Requirement**
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on **March 18, 2004**
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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit:	1654
Attorney Docket No.:	
Applicant:	Dexian Dou et al.
Invention:	ANTI-ANGIOGENIC PEPTIDES FOR CANCER TREATMENT
Serial No:	09/927,006
Filed:	August 9, 2003
Examiner:	Billy Chism

Certificate Under 37 CFR 1.8(b)

I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office via facsimile transmission on the date indicated below.

on March 18, 2004

Michael S. Ozyzowski

RESPONSE TO SECOND ELECTION/RESTRICTION REQUIREMENT AND AMENDMENT

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Official Action mailed March 3, 2004 in connection with the above-identified application, please amend the application as follows.

Amendments to the Claims are reflected in the listing of the claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A peptide or its derivative having anti-angiogenic functionality of the structure:

Arg-Asn-Pro-Asp-Gly-Asp-Ile-Asn-Gly-Pro-Trp (hereinafter referred to as {4}),

or

Trp-Pro-Gly-Asn-Ile-Asp-Gly-Asp-Pro-Asn-Arg (hereinafter referred to as {4'}),

or

Tyr-Thr-Met-Asn-Pro-Arg-Lys-Leu-Phe-Asp-Tyr (hereinafter referred to as {5}),

or

Tyr-Asp-Phe-Leu-Lys-Arg-Pro-Asn-Met-Thr-Tyr (hereinafter referred to as {5'}),

or

X-{4}-Y

or

X-{4'}-Y

or

X-{5}-Y

or

X-{5'}-Y

or

X-{4}-Ala-{5}-Y

or

X-{4'}-Ala-{5'}-Y

or

X-{5}-Ala-{4}-Y

or

X-{5'}-Ala-{4'}-Y

or

X-{4}-Cys-{5'}-Y

or

X-{4'}-Cys-{5'}-Y

or

X-{5}-Cys-{4}-Y

or

X-{5'}-Cys-{4'}-Y

or

X-{4}-(Gly-Gly-Gly-Ser)$_n$-{5}-Y

or

X-{4'}-(Gly-Gly-Gly-Ser)$_n$-{5'}-Y

or

X-{5}-(Gly-Gly-Gly-Ser)$_n$-{4}-Y

or

Cys-{4}-Ala-{5}-Cys

or

Cys-{4'}-Ala-{5'}-Cys

or

Cys-{5}-Ala-{4}-Cys

or

Cys-{5'}-Ala-{4'}-Cys

or

Ala-{4}-Ala-{5}-Ala

or

Ala-{4'}-Ala-{5'}-Ala

or

Ala-{5}-Ala-{4}-Ala

or

Ala-{5'}-Ala-{4'}-Ala

wherein the sequence of amino acids is written from the N-terminus (on the left) to the C-terminus (on the right);

whcrein X is Acetyl group or other customary N-terminal protecting groups;

wherein y is amine, ethylamine, or other customary C-terminal protecting groups;

wherein n = 1 to 3.

Claim 2 (previously presented): A pharmaceutical composition comprising at least one of said peptides or peptide derivatives of claim 1.

Claim 3 (previously presented): A peptide or its derivative according to claim 1, wherein at least one of amino acids of said peptide or derivative is in a D-form.

Claim 4 (previously presented): A pharmaceutical composition comprising at least one of said peptides of derivatives of claim 3.

Claim 5 (previously presented): A peptide or its derivative according to claim 1, wherein one amino acid is removed, replaced, or added to said peptide or derivative to form a new molecule.

Claim 6 (previously presented): A pharmaceutical produce comprising at least one of said peptides or derivatives of claim 5.

Claim 7 (previously presented): A peptide or its derivative according to claim 1, wherein either a C-terminal protecting group or an N-terminal protecting group is removed from the peptide of derivative.

Claim 8 (previously presented): A pharmaceutical product comprising at least one of said peptides or derivatives of claim 7.

Claim 9 (original): A method for the treatment of diseases related to angiogenesis by administering to a patient a therapeutic amount of said peptides or its derivatives in claim 1.

Claim 10 (original): The method in claim 9 wherein said diseases comprises lung cancer, liver cancer, brain cancer, colon cancer, impairment of vision induced by late-stage diabetes, and other diseases related to angiogenesis.

Claim 11 (original): A method for the treatment of diseases related to angiogenesis by administering to a patient a pharmaceutical composition comprising of said peptides or its derivatives in claim 1.

Claim 12 (original): The method in claim 11 wherein said diseases comprises lung cancer, liver cancer, brain cancer, colon cancer, impairment of vision induced by late-stage diabetes, and other diseases related to angiogenesis.

•• REMARKS/ARGUMENTS ••

In the Official Action the Examiner has instituted a Restriction Requirement in which the Examiner has taken the position that claims 1-8 are drawn to a set (SET I) of 16 separate inventions (Groups 1-16)directed to peptides and pharmaceutical products thereof and that claims 9-12 are drawn to a set (SET II) of 16 separate inventions (Groups 17-32) directed to methods of using a peptide pharmaceutical product.

In response to the Restriction Requirement, applicants hereby elect to have SETS I and II and either claims 1-8 or claims 9-12 (Group I) examined in the present application.

On page 6 of the Official Action the Examiner has stated "restriction for examination purposes as indicated is proper to avoid search burdens on the examiner."

The undersigned, a former Examiner, notes that the language quoted by the Examiner regarding the need to "avoid search burdens on the examiner" is a very old quote that, while applicable to the manner in which some arts were formally manually searched, is not applicable to computer searches that are used today to search peptide sequences.

If, as the Examiner purports, slight changes in structure result in functional changes, then all that is required for the Examiner to search any one peptide sequence is to type the exact listing into a computer search program, something that is routinely performed for Examiners by the staff at the Scientific Library at the PTO.

It thus is submitted that there is no real burden on the Examiner to search the very limited peptide sequences claimed by applicants.

As noted below, {4'} is merely the reverse sequence of {4} and {5'} is merely the reverse sequence of {5}. So there is virtually no burden in searching these together. All that is required is typing out 11 amino acid groups of these sequences, (a feat simpler than typing this sentence).

35 U.S.C. §121 provides that restriction may be required to one of two or more "independent" and distinct inventions. However, 37 CFR §1.141 provides that a reasonable number of species may still be claimed in one application if the other conditions of the rule are met.

MPEP §802.01 states:

> The term "independent" (i.e., not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect, for example: (1) species under a genus which species are not usable together as disclosed; or (2) process and apparatus incapable of being used in practicing the process.

The Examiner's position that the different peptides listed in claim 1 are "different in structure and function, and patentably distinct" is respectfully traversed.

In the present case the peptides listed in applicants' claim 1 all have similar function and related structures as evidenced by the fact that the anti-angiogenic activities of P4 and P5 shown in applicants' Fig. 6 are essentially consistent with one another. P4 corresponds to the first peptide listed in claim 1, i.e. {4} and P5 corresponds to the third peptide listed in claim 1, i.e. {5}.

The Examiner has failed to rebut applicants' showing that {4} and {5} have similar functionality.

Rather the Examiner has merely alleged generally that the differences in structure would result in different functionality - but this has been shown not to be the case.

The Examiner's position is clearly wrong on the record and cannot support a proper basis for restriction.

It accordingly has established by experimental evidence that {4} and {5} share a common functionality which is disclosed in applicants' specification.

It is further noted that {4'} is merely the reverse sequence of {4} and {5'} is merely the reverse sequence of {5} so that these peptides share a similar structure.

It is moreover noted that each of the remaining peptides include as a main structural components either {4}, {4'}, {5} or {5'}.

Accordingly, contrary to the Examiner's position, all the listed peptides share a common structure and function.

MPEP §803 states:

> If the search and examination of an entire application can be made without serious burden, the examiner **must examine** it on the merits, even though it includes claims to independent or distinct inventions.

In the present situation, it is submitted that there would be no burden on the Examiner to search both {4} and {5} electronically and any derivatives of these peptides.

37 CFR §1.141 provides that more than one species of an invention can be claimed in a single application provided that the application includes a claim generic to all the claimed species.

MPEP 803.02 states:

> If the members of the Markush group are sufficiently few in number or so closely related that a search and examination of the entire claim can be made without serious burden, the examiner **must examine** all claims on the merits, even though they are directed to independent and distinct inventions. In such a case, the examiner will not follow the procedure described below and will not require restriction.

MPEP 803.04 states:

> ... to further aid the biotechnology industry in protecting its intellectual property without creating an undue burden on the Office, the Commissioner has decided sua sponte to partially waive the requirements of 37 CFR§1.141 *et seq.* and permit a reasonable number of such nucleotide sequences to be claimed in a single application. See Examination of Patent Applications Containing Nucleotide Sequences, 1192 O.G. 68 (November 19, 1996).
>
> It has been determined that normally ten sequences constitute a reasonable number for examination purposes. Accordingly, **in most cases, up to ten independent and distinct nucleotide sequences will be examined in a single application without restriction.** In addition to the specifically selected sequences, those sequences which are patentably indistinct from the selected sequences will also be examined. Furthermore, nucleotide sequences encoding the same protein are not considered to be independent and distinct inventions and will continue to be examined together.

Applicants' peptides {4} and {5} include 11 amino acid groups. It is submitted that conducting a search on these peptides and their derivatives and reviewing such search results would not be a burden on the Examiner.

Moreover, a much greater burden would be imposed on applicants should the Examiner maintain what is actually an Election of Species Requirement (although denied by the Examiner), and force applicants to file a series of individual patents to cover the similar peptides which applicants have discovered provide a common anti-angiogenic functionality.

The Examiner has not established on the record that the listed peptides are "independent" and therefore properly restrictable. Applicants submit that the listed peptides are not independent and not distinct from one another for purposes of examination.

The Examiner is respectfully requested to reconsider and withdrawal the Election of Species Requirement and examine all claims 1-8 in the present application.

Notwithstanding applicants' contention that the Election of Species Requirement is improper and should be withdrawn, applicants acknowledge that to be fully responsive, they are required to elect one of the peptides listed in claim 1.

Accordingly, applicants hereby elect SET I and Group 1 that is directed to sequence {4} and request that the Examiner consider examining both peptides {4} and {5} based upon the similar functionality shown in Fig. 6.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

If upon consideration of the above, the Examiner should feel that there remains outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,

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